Practitioner's Docket No. MPI99-025CP2DV1M

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Curtis, Rory A. J. et al.

Application No.:

Group No.:

N/A

Filed:

Herewith

Examiner:

. . . .

For:

erewith Exami

N/A

NOVEL POTASSIUM CHANNEL MOLECULES AND USES THEREFOR

Mail Stop Patent Application Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

List of Sections Forming Part of This Information Disclosure Statement

The following sections are being submitted for this Information Disclosure Statement:

- 1. [X] Preliminary Statements
- 2. (X) Forms PTO/SB/08A and 08B (substitute for Form PTO-1449) (16 pages)
- 3.. (X) Identification of Prior Application in Which Listed Information Was Already Cited and for Which No Copies Are Submitted or Need Be Submitted

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Preliminary Statements

Applicants submit herewith patents, publications or other information, of which they are aware that they believe may be material to the examination of this application, and in respect of which, there may be a duty to disclose.

The filing of this information disclosure statement shall not be construed as a representation that a search has been made (37 C.F.R. section 1.97(g)), an admission that the information cited is, or is considered to be, material to patentability, or that no other material information exists.

The filing of this information disclosure statement shall not be construed as an admission against interest in any manner. Notice of January 9, 1992, 1135 O.G. 13-25, at 25.

Identification of Prior Application in Which Listed Information Was Already Cited and for Which No Copies Are Submitted or Need Be Submitted

This application relies, under 35 U.S.C. section 120, on the earlier filing date of prior application Serial No.: 09/561,763, filed on April 28, 2000.

The following references were submitted to, and/or cited by, the Office in the prior application(s) and, therefore, are not required to be provided in this application. However, in the event additional copies are necessary, the undersigned will submit such copies upon request.

November 4, 2003

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Sheet	1	of	1	Attorney Docket Number	MPI99-025CP2DV1M

				U.S. PATENT DOCUME	NTS	
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	A2	5,955,259		Holmes, et al.	09/99	
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Examiner	Cite	Foreign Patent Document			Name of Patentee	Date of Publication of	Pages, Columns, Lines, Where	-6
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Sheet	1	of	15	Attorney Docket Number	MPI99-025CP2DV1M

		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No.1	Include the name of the author (in CAPTIAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and-or country where published.	T ²
	C1	Database EMBL Accession No. AA553991, "Homo Sapiens cDNA Clone IMAGE: 1015480 3', mRNA Sequence." Strausberg, Robert (1997-09-11).	
	C2	Database EMBL Accession No. Al740592, "Homo Sapiens cDNA Clone IMAGE: 2365922 3', mRNA Sequence." Strausberg, Robert (1998-06-28).	
	C3	Database EMBL Accession No. AQ310967, "Homo Sapiens Genomic Clone 2384B13, Genomic Survey Sequence." Adams, M. D. et al. (1998-12-23).	
	C4	Janeway, C. A. Jr., and Travers, P., ImmunoBiology: The Immune System in Health and Disease, Current Biology Ltd/Garland Publishing Inc.; London, UK and New York, NY, USA; 1994, p. G:1.	
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	C9	Doyle, D. A., et al., "The Structure of the Potassium Channel: Molecular Basis of K+ Conduction and Selectivity," Science 280:69-77 (1998)	
	C10	Duprat F., et al., "Task, a Human Background K+ Channel to Sense External pH Variations Near Physiological pH," EMBO J. 16(17):5464-5471 (1997)	-

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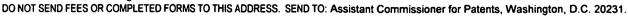
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				Group Art Unit	N/A		
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	C11	Fink, M. et al., "Cloning, Functional Expression and Brain Localization of a Novel Unconventional Outward Rectifier K+ Channel," EMBO J. 15(24):6854-6862 (1996)	
	C12	Fink, M. et al., "A Neuronal Two P Domain K+ Channel Stimulated by Arachidonic Acid and Polyunsaturated Fatty Acids," EMBO J. 17(12):3297-3308 (1998)	
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	C15	Ketchum, K. A. et al., "A New Family of Outwardly Rectifying Potassium Channel Proteins with Two Pore Domains in Tandem," Nature 376(6542):690-695 (1995)	
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	C19	Lesage, F. et al., "The Structure, Function and Distribution of the Mouse TWIK-1 K+ Channel," FEBS Lett. 402(1):28-32 (1997)	

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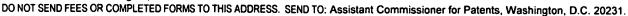
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Sheet	3	of	15	Attorney Docket Number	MPI99-025CP2DV1M			

	T	OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS	
Examiner nitials*	Cite No.1	Include the name of the author (in CAPTIAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and-or country where published.	1
	C20	Martin-Gallardo, A. et al., "Automated DNA Sequencing and Analysis of 106 Kilobases from Human Chromosome 19q13.3," Nature Genet. 1:34-30 (1992)	
	C21	Miosga, T. et al., "Sequence and Function analysis of a 9.46 kb Fragment of Saccharomyces Cerevisiae Chromosome X," Yeast 10(7):965-973 (1994)	
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	C25	Wilson, R. et al., "2.2 Mb of Contiguous Nucleotide Sequence from Chromosome III of C. Elegans," Nature 368(6466):32-38 (1994)	
	C26	Yamaguchi, M. et al., "The Primary Structure of the Rat Guanylyl A/Atrial Natriuretic Peptide Receptor Gene," J. Biol. Chem. 265(33):20414-20420 (1990)	
	C27	GenBank Accession No. AA925138 for UI-R-A1-en-b-02-0-UI.s1 UI-R-A1 Rattus Norvegicus cDNA Clone UI-R-A1-en-b-02-0-UI 3' similar to gi; 2809390; gb; AF031384 Rattus Norvegicus TWIK-related acid Sensitive K+ channel (TASK) mRNA, complete cpds, mRNA sequence, February 7, 1999	
	C28	GenBank Accession No. AAA81455 for Similar to Potassium Channel Proteins and to C. Elegans Protein F22B7.7; November 14, 1995	

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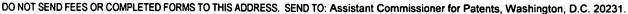
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	C29	GenBank Accession No. AAA83199 for Weak Similarity to a Short Region of Putative Potassium Channel Proteins; December 12, 1995	
	C30	GenBank Accession No. AAA96127 for Coded for by C. Elegans cDNA yk9g1.3; coded for by C. Elegans cDNA yk9g1.5; coded for by C. Elegans cDNA CEESU55F; April 18, 1996	
	C31	GenBank Accession No. AAB01688 for TWIK-1, June 7, 1996	
	C32	GenBank Accession No. AAB04567 for Weak Similarity to a Potassium Channel Protein, July 22, 1996	
	C33	GenBank Accession No. AAB52940 for Weak Similarity to S. Cerevisiae Outward-Rectifier Potassium Channel TOK1, April 21, 1997	
	C34	GenBank Accession No. AAB54033 unidentified protein, May 12, 1997	
	C35	GenBank Accession No. AAB61602 for rabKCNK1, June 18, 1997	
	C36	GenBank Accession No. AAC16973 for TWIK-1 K+ Channel, September 29, 1998	
	C37	GenBank Accession No. AAC32854 for Putative Potassium Channel Subunit n2P17m1-2, December 21, 1998	

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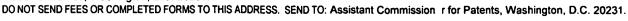
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	C38	GenBank Accession No. AAC32855 for Putative Potassium Channel Subunit n2P17m1-1, December 21, 1998	
	C39	GenBank Accession No. AAC32856 for Putative Potassium Channel Subunit n2P16, December 21, 1998	
	C40	GenBank Accession No. AAC32857 for Putative Potassium Channel Subunit n2P20, December 21, 1998	
. •	C41	GenBank Accession No. AAC32858 for Putative Potassium Channel Subunit n2P17m2-2, December 21, 1998	
	C42	GenBank Accession No. AAC32859 for Putative Potassium Channel Subunit n2P17m2-3	
	C43	GenBank Accession No. AAC32860 for Putative Potassium Channel Subunit n2P17m3, December 21, 1998	
	C44	GenBank Accession No. AAC32861 for Putative Potassium Channel Subunit n2P18, December 21, 1998	
	C45	GenBank Accession No. AAC32862 for Putative Potassium Channel Subunit n2P17m2-1, December 21, 1998	
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	C47	GenBank Accession No. AAC32865 for Putative Potassium Channel Subunit n2P24, December 21, 1998	
	C48	GenBank Accession No. AAC39952 for TWIK-related acid-sensitive K+ channel, February 2, 1999	
	C49	GenBank Accession No. AAC40181 for TRAAK K+ channel subunit, February 2, 1999	
	C50	GenBank Accession No. AAC47976 for Contains Similarity to K+ channel proteins, February 26, 1998	
	C51	GenBank Accession No. AAC48050 for Similar S. Cerevisiae Outward-Rectified Potassium channel TOK1, June 2, 1999	
	C52	GenBank Accession No. AAC51777 for TWIK-related acid-sensitive K+ channel, February 4, 1999	
	C53	GenBank Accession No. AAC53005 for TREK-1 K+ channel Subunit, February 4, 1999	
<u>, </u>	C54	GenBank Accession No. AAC53367 for TWIK-related acid-sensitive K+ channel, February 4, 1999	
	C55	GenBank Accession No. AAC69250 for Two P domain Potassium channel ORK1, October 29, 1998	

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	C56	GenBank Accession No. AAC71141 for Proline-rich, November 5, 1998	
	C57	GenBank Accession No. AAC71151 for Contains similarity to outward-rectified potassium channels, November 5, 1998	
	C58	GenBank Accession No. AAC79458 for Two-pore domain K+ channel; TASK-2, November 17, 1998	
	C59	GenBank Accession No. AAD01203 for Two-pore domain channel TPKC1, July 2, 1997	
	C60	GenBank Accession No. AAD09336 for Putative potassium channel TWIK, January 26, 1999	
	C61	GenBank Accession No. AAD09337 for Putative potassium channel DP3, January 26, 1999	
	C62	GenBank Accession No. AAD09338 for Putative potassium channel DP4, January 26, 1999	
	C63	GenBank Accession No. AB008537 for Mus Musculus mRNA for cTBAK, complete cds, February 13, 1999	_
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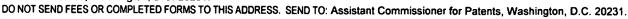
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SIAI	EMEN	IBYA	PPLICANT	First Named Inventor	Rory A. J. Curtis et al.
				Group Art Unit	N/A
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Sheet	8	of	15	Attorney Docket Number	MPI99-025CP2DV1M

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	C65	GenBank Accession No. AC005035 for Homo Sapiens BAC clone NH0353P23 from 2, complete sequence, December 3, 1998	
	C66	GenBank Accession No. AC005183 for Homo Sapiens Chromosome 12p13.3, August 21, 1998	
	C67	GenBank Accession No. AC005290 Unidentified protein, December 10, 1998	
	C68	GenBank Accession No. AC005848 for Homo Sapiens Chromosome 11 clone CIT987SK-1012F4, October 22, 1998	
- 0. 100 9 70	C69	GenBank Accession No. AC006126 for Homo Sapiens Chromosome 19, cosmid F18718, December 17, 1998	
	C70	GenBank Accession No. AC006167 for Homo Sapiens clone UWGC:y67c092 from 6p21, December 8, 1998	
	C71	GenBank Accession No. AF004695 for Oryctolagus cuniculus double-pore potassium channel rabKCNK1 mRNA, June 25, 1997	
	C72	GenBank Accession No. AF006824 for Mus Musculus TWIK-related acid-sensitive K+ channel (TASK) mRNA, October 7, 1997	
	C73	GenBank Accession No. AF022821 for Mus Musculus putative potassium channel DP4 mRNA, January 26, 1999	_

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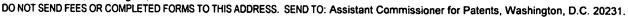
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SIA	IEMEN	II BY A	PPLICANT	First Named Inv ntor	Rory A. J. Curtis et al.
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Sheet	9	of	15	Attorney Docket Number	MPI99-025CP2DV1M

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	C74	GenBank Accession No. AF033017 for Mus Musculus TWIK-1 K+ channel mRNA, May 23, 1998	
	C75	GenBank Accession No. AF056492 for Mus Musculus TRAAK K+ channel subunit mRNA, July 21, 1998	
	C76	GenBank Accession No. AF084830 for Homo Sapiens two pore domain K+ channel (TASK02) mRNA, November 25, 1998	
	C77	GenBank Accession No. OMJ001356 for Orchis morio (Orchidaceae) microsatellite, September 16, 1997	-
-	C78	GenBank Accession No. AQ240175 for CIT-HSP-2385B13.TR.1 CIT-HSP Homo Sapiens genomic clone 2385B13, September 29, 1998	
	C79	GenBank Accession No. AQ319946 for RPCI11-111L8.TJ RPCI-11 Homo Sapiens genomic clone RPCI-11-111L8, May 5, 1999	
	C80	GenBank Accession No. B82804 for RPCI11-17N16.TP RPCI-11 Homo Sapiens genomic clone RPCI-11-17N16, April 8, 1999	
	C81	GenBank Accession No. BAA25436 for cTBAK, February 13, 1999	
	C82	GenBank Accession No. CAA19494 for Similar to potassium channel protein, December 18, 1998	

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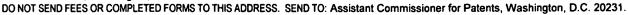
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	C83	GenBank Accession No. CAA21041 for cDNA EST yk449e10.5 comes from this gene; cDNA EST EMBL: D35319 comes from this gene; cDNA EST EMBL: c12322 comes from this gene; cDNA EST EMBL: D32633 comes from this gene, November 23, 1998	
	C84	GenBank Accession No. CAA21749 for Predicted using Genefinder; cDNA EST EMBL: Z14528 comes from this gene, November 23, 1998	
	C85	GenBank Accession No. CAA64176 for Outward-rectifier potassium channel, February 23, 1996	
	C86	GenBank Accession No. CAA84797 for Weak similarity with Drosophila Melanogaster potassium channel proteins, November 21, 1998	
	C87	GenBank Accession No. CAA90066 for Weak similarity to a protein domain (segment H5) thought to line the channel pore of potassium channels; cDNA EST EMBL: T00465 comes from this gene; cDNA EST EMBL: D36509 comes from this gene, November 23, 1998	
	C88	GenBank Accession No. CAA90259 for M110.2, November 23, 1998	
	C89	GenBank Accession No. CAA91376 for Similarity to potassium channel protein; cDNA EST EMBL: D70075 comes from this gene; cDNA EST EMBL: D66354 comes from this gene, November 23, 1998	
	C90	GenBank Accession No. CAA92504 for Similarity to Drosophila potassium channel protein (PIR Acc. No. JH0697); cDNA EST EMBL: M89234 comes from this gene; December 14, 1998	
	C91	GenBank Accession No. CAA92568 for Similarity to Drosophila potassium channel protein (PIR Acc. No. JH0697); cDNA EST EMBL: D27674 comes from this gene; cDNA EST EMBL: D32607 comes from this gene; cDNA EST EMBL: D35287 comes from this gene; cDNA EST EMBL: D64971 comes from this gene; cDNA EST EMBL: D68246 comes from this gene, November 23, 1998	

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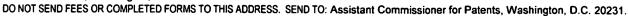
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Sheet	11	of	15	Attorney Docket Number	MPI99-025CP2DV1M

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	C92	GenBank Accession No. CAA93875 for Similarity to yeast potassium channel protein; November 23, 1998	
	C93	GenBank Accession No. CAA93881 for Similarity to potassium channel proteins, November 23, 1998	
	C94	GenBank Accession No. CAA94204 for Predicted using Genefinder; Similarity to yeast potassium channel protein TOK1; November 23, 1998	
	C95	GenBank Accession No. CAA95801 for Predicted using Genefinder; weak similarity to yeast potassium channel protein TOK1; November 23, 1998	
	C96	GenBank Accession No. CAA98271 for Similar to potassium channel protein like; December 18, 1998	
	C97	GenBank Accession No. CAA98957 for Predicted using Genefinder; Similarity to potassium channel protein, November 23, 1998	
	C98	GenBank Accession No. CAA99871 for Similar to potassium channel protein; November 23, 1998	
	C99	GenBank Accession No. CAB01238 Predicted using Genefinder; similarity to worm potassium channel proteins; November 23, 1998	
	C100	GenBank Accession No. CAB01740 for Similar to potassium channel protein; November 23, 1998	

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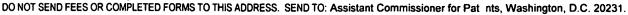
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	C101	GenBank Accession No. CAB02119 for Similar to potassium channel protein like; November 23, 1998	
	C102	GenBank Accession No. CAB03071 Predicted using Genefinder; similarity to potassium channel proteins; November 23, 1998	
	C103	GenBank Accession No. CAB03109 Similar to potassium channel protein; November 23, 1998	
	C104	GenBank Accession No. CAB03914 for C24H11.8, November 23, 1998	
	C105	GenBank Accession No. CAB04251 for cDNA EST yk240f2.5 comes from this gene; cDNA EST yk354h3.5 comes from this gene; cDNA EST yk354h3.3 comes from this gene; cDNA EST yk240f2.3 comes from this gene, November 23, 1998	
	C106	GenBank Accession No. CAB04923 for cDNA EST EMBL: D66510 comes from this gene; cDNA EST EMBL: D70321 comes from this gene, November 23, 1998	
	C107	GenBank Accession No. CAB04926 for cDNA EST yk224a2.3 comes from this gene; cDNA EST yk224a2.5 comes from this gene, November 23, 1998	
	C108	GenBank Accession No. CAB05769 Similar to potassium channel protein; November 23, 1998	
	C109	GenBank Accession No. CAB07286 for T28A8.1, November 23, 1998	

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				Group Art Unit	N/A	
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illiais	C110	GenBank Accession No. CAB07375 for F31D4.7, November 23, 1998	┝
		Cembank Accession No. CADO7070 for 1 070-4.7, November 20, 1000	
	C111	GenBank Accession No. CAB07854 for R12G8.2, November 23, 1998	
	C112	GenBank Accession No. J05677 for RAT guanylyl cyclase A/atrial natriuretic peptide receptor (GC-A) gene, January 15, 1991	
	C113	GenBank Accession No. L17688 for Human STS UT5089, May 28, 1993	
	C114	GenBank Accession No. M63796 for Human DNA from cosmid MMDA from Chromosome 19q13.3, April 9, 1992	
	C115	GenBank Accession No. P34410 for TWK-8 protein, July 15, 1998	
	C116	GenBank Accession No. P40310 for Outward-rectifier potassium channel TOK1 (Two-domain outward rectifier K+ channel York), November 1, 1997	_
	C117	GenBank Accession No. U31663 for Mus Musculus Chromosome 2 marker um-m12 TC dinucleotide 2 DNA sequence, August 30, 1995	
	C118	GenBank Accession No. U31761 for Mus Musculus cGMP-phosphodiesterase beta-subunit gene, May 21, 1996	

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				Group Art Unit	N/A	
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Sheet	14	of	15	Attorney Docket Number	MPI99-025CP2DV1M	

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Examiner nitials*	Cite No. ¹	(book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and-or country where published.	T
	C119	GenBank Accession No. U33632 for Human two P-domain K+ channel TWIK-1 mRNA, June 5, 1996	
	C120	GenBank Accession No. U55321 for Drosophila Melanogaster two P domain potassium channel ORK1 (ORK1) mRNA, October 29, 1998	
· · · · · · · · · · · · · · · · · · ·	C121	GenBank Accession No. U73488 for Mus Musculus TREK-1 K+ channel subunit mRNA, January 25, 1997	
-	C122	GenBank Accession No. U76996 for Homo Sapiens two P domain channel subunit (HOHO1) mRNA, January 29, 1998	
	C123	GenBank Accession No. U90065 for Human potassium channel KCNO1 mRNA, April 1, 1997	
	C124	GenBank Accession No. Y14406 for Homo Sapiens DNA for 3' IgH locus control region, HS3 enhancer, February 12, 1998	
	C125	GenBank Accession No. Z55211 for Homo Sapiens CpG island DNA genomic Mse1 fragment, clone 26g4, FORWARD READ CPG26G4.FT1B, October 17, 1995	
	C126	GenBank Accession No. Z75539 for Caenorhabditis Elegans cosmid F28C1, December 14, 1998	
	C127	GenBank Accession No. AC005661 for citb_54_o_2, DNA; November 30, 1999	

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STAT	TEMENT B	Y AF	PPLICANT	First Named Inv nt r	Rory A. J. Curtis et al.	
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	C128	GenBank Accession No. AC005880 for citb_43_a_11, DNA; November 5, 1999	
	C129	GenBank Accession No. Z78198 for Caenorhabditis elegans cosmid F55C5, DNA; January 26, 2000	
	C130	GenBank Accession No. Z81475 for Caenorhabditis elegans cosmid C24H11, DNA; December 14, 1999	Ē
	C131	GenBank Accession No. Z92813 for Caenorhabditis elegans cosmid T28A8, DNA; December 14, 1999	-
	C132	The C. elegans Sequencing Consortium, "Genome Sequence of the Nematode C. elegans: A Platform for Investigating Biology," Science 282(5396):2012-2018 (1998)	
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Signature	Considered

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